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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,555	12/05/2003	Delton R. Thompson JR.	56109US011	9972
32692	7590	09/01/2006	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY			BUTLER, PATRICK	
PO BOX 33427			ART UNIT	
ST. PAUL, MN 55133-3427			PAPER NUMBER	

1732
DATE MAILED: 09/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/728,555	Applicant(s) THOMPSON ET AL.	
	Examiner Patrick Butler	Art Unit 1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The Applicant's Amendments, filed 21 June 2006, and Accompanying Remarks, filed 10 April 2006 and 21 June 2006, have been entered and have been carefully considered. On the page filed 21 June 2006 titled Response to Notice of Non-Compliant Amendment, Applicant indicates a new listing of claims is submitted. No listing is found filing dated 21 June 2006. Thus, there are no Claim amendments.

In view of Applicant's amendment of the specification, the Examiner withdraws the previously set forth objection as detailed in the Specification section of the Office Action dated 11 January 2006.

Despite these advances, the invention as currently claimed is not found to be patentable for reasons herein below.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Butin et al. (US Patent No. 3,849,241).

With respect to Claim 1, Butin teaches making melt blown non-woven webs by extruding PET at a temperature of 550 F (288 C), which is less than about 295 C, with a stream of air at 500 F (260 C), which reads on the claimed range of less than about 260

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C given the range implied by "about", delivered at a sonic velocity level, which is greater than 100 meters per second, and collecting the filaments into a mat (see abstract; col. 4, lines 31-45; col. 7, lines 59-64; and col. 9, lines 20-23).

While Butin does not detail aspects of the properties of crystallization of the PET, the PET of Butin would necessarily have chain-extended crystallization imparted principally because Butin teaches the same process as applicant.

With respect to Claim 2, Butin teaches that the extruded resin would have about 0.6 to about 1.4 i.v., which reads on the claimed range of 0.45-0.75 i.v. (see col. 2, lines 43-58).

With respect to Claim 3, while Butin does not detail aspects of the properties of crystallization of the PET, the PET of Butin would necessarily exhibit a double melting peak on a DSC plot which is representative of a first molecular portion within the fiber that comprises a non-chain-extended crystalline phase, and a second molecular portion within the fiber that comprises a chain-extended crystalline phase and melts at an elevated temperature over that of the non-chain-extended crystalline phase principally because Butin teaches the same process as applicant.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Butin et al. (US Patent No. 3,849,241) as applied above to Claim 1, and further in view of Thompson et al. '081 (US Patent No. 5,841,081).

With respect to Claim 4, Butin teaches making a nonwoven web as previously described.

Butin does not specifically teach that additional fibers or particles are dispersed among the PET fibers before they are collected.

Thompson '081 teaches a method of making a nonwoven web by adding 15 percent or greater heat activatable staple fibers to the other fibers within the web.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add heat activatable fibers as taught by Thompson '081 within the web as taught by Butin in order to bond the heat activatable fibers with each other and the other fibers within the web because it would provide a source area and a receiving area such that a major face of the insulation web intercepts and thereby significantly attenuates sound waves passing from the source area to the receiving area (see Thompson '081 col. 1. lines 55-63).

Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Butin et al. (US Patent No. 3,849,241) in view of Thompson et al. '322 (US Patent No. 5,958,322).

With respect to Claim 5, Butin teaches making melt blown non-woven webs by extruding PET resin with about 0.6 to about 1.4 i.v., which reads on the claimed range of about 0.45-0.6 i.v. given the range implied by "about," at a temperature of 550 °F

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(288 °C), which is less than about 285 °C given the range implied by “about”, with a stream of air at 500 °F (260 °C), which reads on the claimed range of less than about 270 C, delivered at a sonic velocity level, which is greater than 100 meters per second, to make fibers of 0.5 to 5 microns (micrometers) diameter, which is within the claimed range of an average diameter of about 20 micrometers or less, and collecting the filaments into a mat (see abstract; see col. 2, lines 43-58; col. 4, lines 31-45; col. 7, lines 59-64; col. 9, lines 20-23; and col. 19, lines 30-37).

Butin teaches that self-bonding can occur via various processes (see col. 19, lines 33-37) but does not explicitly teach passing the web through an oven.

Thompson '322 teaches annealing a non-woven while restrained through an oven (see abstract and col. 11, lines 53-58). As the temperature is sufficiently high to thermally bond the fibers together, the fibers would necessarily thermally bond together—autogenously bonded.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to pass a nonwoven through an oven as taught by Thompson '322 utilizing the web as taught by Butin in order to form a dimensionally stable nonwoven fibrous web (see Thompson '322 abstract).

With respect to Claim 6, Butin et al. in view of Thompson et al. '322 do not appear to explicitly teach that the extruder temperature is within the claimed range (e.g., less than 275 °C). However, in this regard, Butin further teaches the total degradation is a function of the pre-extruder temperature, extruder temperature, airflow, and air temperature. As such, Butin obvious recognizes that extruder temperature is a result-

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effective variable. Since the extruder temperature would be a result-effective variable, one of ordinary skill in the art would have obviously determined the optimum the extruder temperature applied in the process of Butin et al. in view of Thompson et al. '322 through routine experimentation based upon total desired thermal degradation and its related viscosity.

With respect to Claim 7, Butin teaches that the speed of the air is at sonic velocity levels, which is included within the claimed range of at least 150 meters per second (see col. 9, lines 20-23).

With respect to Claim 10, Butin teaches that thermoplastic polymer of the web can include PET and other polymers as a mixture (see col. 4, lines 32-42).

Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Butin et al. (US Patent No. 3,849,241) in view of Thompson et al. '322 (US Patent No. 5,958,322) as applied to Claim 5 above, and further in view of Thompson et al. '081 (US Patent No. 5,841,081)

With respect to Claim 8, Butin in view of Thompson et al. '322 teaches making a nonwoven web as previously described.

Butin in view of Thompson et al. '322 does not specifically teach that additional fibers or particles are dispersed among the PET fibers before they are collected.

Thompson '081 teaches a method of making a nonwoven web by adding 15 percent or greater heat activatable staple fibers to the other fibers within the web.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add heat activatable fibers as taught by Thompson '081 within

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the web as taught by Butin in view of Thompson et al. '322 in order to bond the heat activatable fibers with each other and the other fibers within the web because it would provide a source area and a receiving area such that a major face of the insulation web intercepts and thereby significantly attenuates sound waves passing from the source area to the receiving area (see Thompson '081 col. 1. lines 55-63).

With respect to Claim 9, Thompson '081 teaches that the heat activatable fibers added to the PET fibers are in staple form (see col. 1, lines 66 through col. 2, line 2).

Claims 1-3 are rejected under 35 USC 103(a) as being unpatentable over Butin (US Patent No. 3,849,241) in view of admitted prior art (Application No. 09/716,790, Paper No. 7, 12 December 2002).

Butin teaches making melt blown non-woven webs by extruding PET at a temperature of 550 °F (288 °C), which is less than about 295 °C, with a stream of air at 500 °F (260 °C), which reads on the claimed range of less than about 260 °C given the range implied by "about", delivered at a sonic velocity level, which is greater than 100 meters per second, and collecting the filaments into a mat (see abstract; col. 4, lines 31-45; col. 7, lines 59-64; and col. 9, lines 20-23).

Butin does not expressly disclose that the process makes a PET with a double melting peak.

Admission discloses "meltspun oriented PET fibers that exhibit such characteristics" as a "dual melting peak" "with a second melting peak representative of a molecular portion 'in chain-extended crystalline form and [having a melting point

elevated over that of the non-chain-extended crystalline form” (Application No. 09/716,790, Paper No. 7, 12 December 2002, Page 3, 5th complete paragraph).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make Applicant’s admittedly known fiber into a web by using Butin’s controllable variables within the PET web-making process in order to have a PET web process that successfully makes the known fibers into web at a high polymer throughput (industrial productivity) (see Butin abstract and col. 4, lines 31-45).

With respect to Claim 2, Butin teaches that the extruded resin would have about 0.6 to about 1.4 i.v., which reads on the claimed range of 0.45-0.75 i.v. (see col. 2, lines 43-58).

With respect to Claim 3, while Butin does not detail aspects of the properties of crystallization of the PET, the PET of Butin would necessarily exhibit a double melting peak on a DSC plot which is representative of a first molecular portion within the fiber that comprises a non-chain-extended crystalline phase, and a second molecular portion within the fiber that comprises a chain-extended crystalline phase and melts at an elevated temperature over that of the non-chain-extended crystalline phase principally because Butin teaches the same process as applicant and per admission by applicant that it is known to make the PET fiber.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Butin (US Patent No. 3,849,241) in view of admitted prior art (Application No. 09/716,790, Paper No. 7, 12 December 2002) as applied above to Claim 1, and further in view of Thompson et al. '081 (US Patent No. 5,841,081).

Butin in view of Applicant's admission does not specifically teach that additional fibers or particles are dispersed among the PET fibers before they are collected.

Thompson '081 teaches a method of making a nonwoven web by adding 15 percent or greater heat activatable staple fibers to the other fibers within the web.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add heat activatable fibers as taught by Thompson '081 within the web as taught by Butin in view of Applicant's admission in order to bond the heat activatable fibers with each other and the other fibers within the web because it would provide a source area and a receiving area such that a major face of the insulation web intercepts and thereby significantly attenuates sound waves passing from the source area to the receiving area (see Thompson '081 col. 1. lines 55-63).

Claims 5-7 and 10 are rejected under 35 USC 103(a) as being unpatentable over Butin (US Patent No. 3,849,241) in view of admitted prior art (Application No. 09/716,790, Paper No. 7, 12 December 2002) and Thompson et al. '322 (US Patent No. 5,958,322).

Butin teaches making melt blown non-woven webs by extruding PET resin with about 0.6 to about 1.4 i.v., which reads on the claimed range of about 0.45-0.6 i.v. given the range implied by "about," at a temperature of 550 °F (288 °C), which is less than about 285 °C given the range implied by "about", with a stream of air at 500 °F (260 °C), which reads on the claimed range of less than about 270 °C, delivered at a sonic velocity level, which is greater than 100 meters per second, to make fibers of 0.5 to 5 microns (micrometers) diameter, which is within the claimed range of an average

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diameter of about 20 micrometers or less, and collecting the filaments into a mat (see abstract; see col. 2, lines 43-58; col. 4, lines 31-45; col. 7, lines 59-64; col. 9, lines 20-23; and col. 19, lines 30-37).

Butin does not expressly disclose a PET with a double melt peak.

Admission discloses “meltspun oriented PET fibers that exhibit such characteristics” as a “dual melting peak” “with a second melting peak representative of a molecular portion in chain-extended crystalline form and [having a melting point elevated over that of the non-chain-extended crystalline form]” (Application No. 09/716,790, Paper No. 7, 12 December 2002, Page 3, 5th complete paragraph).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to pass a nonwoven through an oven as taught by Thompson '322 utilizing the web as taught by Butin in view of Applicant's admission in order to form a dimensionally stable nonwoven fibrous web (see Thompson '322 abstract).

With respect to Claim 6, Butin in view of Applicant's admission and Thompson et al. '322 do not appear to explicitly teach that the extruder temperature is within the claimed range (e.g., less than 275 °C). However, in this regard, Butin further teaches the total degradation is a function of the pre-extruder temperature, extruder temperature, airflow, and air temperature. As such, Butin obvious recognizes that extruder temperature is a result-effective variable. Since the extruder temperature would be a result-effective variable, one of ordinary skill in the art would have obviously determined the optimum the extruder temperature applied in the process of Butin in view of Applicant's admission and Thompson et al. '322 through routine experimentation based upon total desired thermal degradation and its related viscosity.

With respect to Claim 7, Butin teaches that the speed of the air is at sonic velocity levels, which is included within the claimed range of at least 150 meters per second (see col. 9, lines 20-23).

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Claims 8 and 9 are rejected under 35 USC 103(a) was being unpatentable over Butin (US Patent No. 3,849,241) in view of admitted prior art (Application No. 09/716,790, Paper No. 7, 12 December 2002) and Thompson et al. '322 (US Patent No.

5,958,322) as applied to Claim 5 above, and further in view of Thompson et al. '081 (US Patent No. 5,841,081)

With respect to Claim 8, Butin in view of Applicant's admission and Thompson et al. '322 teaches making a nonwoven web as previously described.

Butin in view of Applicant's admission and Thompson et al. '322 does not specifically teach that additional fibers or particles are dispersed among the PET fibers before they are collected.

Thompson '081 teaches a method of making a nonwoven web by adding 15 percent or greater heat activatable staple fibers to the other fibers within the web.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add heat activatable fibers as taught by Thompson '081 within the web as taught by Butin in view of Applicant's admission and Thompson et al. '322 in order to bond the heat activatable fibers with each other and the other fibers within the web because it would provide a source area and a receiving area such that a major face of the insulation web intercepts and thereby significantly attenuates sound waves passing from the source area to the receiving area (see Thompson '081 col. 1. lines 55-63).

With respect to Claim 9, Thompson '081 teaches that the heat activatable fibers added to the PET fibers are in staple form (see col. 1, lines 66 through col. 2, line 2).

Response to Arguments

Applicant's arguments filed 10 April 2006 and 21 June 2006 have been fully considered but they are not persuasive.

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Applicant argues with respect to the 35 USC 102 and 103 rejections. Applicant's arguments appear to be on the grounds that:

1) Butin can really only be relied upon for the teaching of polyolefins, particularly PP.

2) For Butin to extend to other polymers, detailed and specific teachings would be required, thus Butin is not enabled to PET.

3) Butin's process would cause degradation as opposed to processing without degradation in the process of melt-blowing.

4) Attached US Patent No. 5,141,699 is directed to the melt-blowing of PP and PET with widely different temperatures (200 °C vs. 315-335 °C) and is the best evidence of record of using PET within the claimed process. However, the PET temperatures are significantly different from the claimed process.

5) The new claimed method achieves unique results. The PET fibers are dimensionally stable, strong, and oriented.

6) Thompson's use of a tentering apparatus fails to prepare PET fibers directly from the melt-blowing die.

7) Butin's teaching making melt blown non-woven webs a temperature of 550 °F (288 °C) has no relevance to melt-blowing PET. Instead it is simply the lower limit of PP degradation.

8) If Applicant's statement of admission constitutes prior art, the rejection as combined with Butin still fails because of Butin's teachings of PP rather than PET.

The Applicant's arguments are addressed as follows:

1, 7, and 8) Butin can be relied upon for the teaching of polyolefins, particularly PP and PET because of the following:

- The process parameters of the Butin's invention are to select one of the polymer resins listed on in col. 4, lines 31-49. Of which PET is specifically used in the invention.
- The process parameters of the Butin's invention use the temperature 550 F (288 °C), which is less than about 285 °C given the range implied by "about" in the claim. the temperatures that read on the claimed range select one of the polymer resins listed on in col. 4, lines 31-49. Of which PET is specifically used in the invention. These parameters are set out not in only an example pertaining to PP, but in the teachings that correspond to the polymers taught.
- PP is not the limitation of the claimed invention of Butin in Claim 1, which teaches using thermoplastic polymer. As previously described, the thermoplastic polymers mentioned in the specification are not limited to PP and explicitly include PET.
- The reference may be relied upon for all that it teaches, which includes PET as a polymer to be used on the process.

2) The elements needed to practice the invention with PET as claimed by Applicant are taught by Butin as previously described. If additional critical elements of the process are needed, they are not reflected in the present claims.

2, 3, and 5) The examiner recognizes that all of the claimed effects and physical properties are not positively stated by the reference(s). Note however that the references teach all of the claimed ingredients, process steps and process conditions and thus, the claimed effects and physical properties would necessarily be achieved by carrying out the disclosed process. If it is applicants' position that this would not be the case: (1) evidence would need to be presented to support applicants' position; and (2) it would be the examiner's position that the application contains inadequate disclosure in that there is no teaching as to how to obtain the claimed properties and effects by carrying out only these steps.

3) In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., extrusion without degradation) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

4) US Patent No. 5,141,699 is not cited in an IDS, was attached in Applicant's response, and was not relied upon to teach melt extrusion of PP at the claimed temperature and as taught by Butin.

6) Given the claim uses open claim language—comprising—the use of tenter reads on the claim.

Alternatively, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which

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applicant relies (i.e., excluding tenter use) are not recited in the rejected claim(s).

Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick Butler whose telephone number is (571) 272-8517. The examiner can normally be reached on Mo.-Th. 7:30 a.m. - 5 p.m. and alternating Fridays.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Patrick Butler
Assistant Examiner
Art Unit 1732


CHRISTINA JOHNSON
PRIMARY EXAMINER
8/31/00